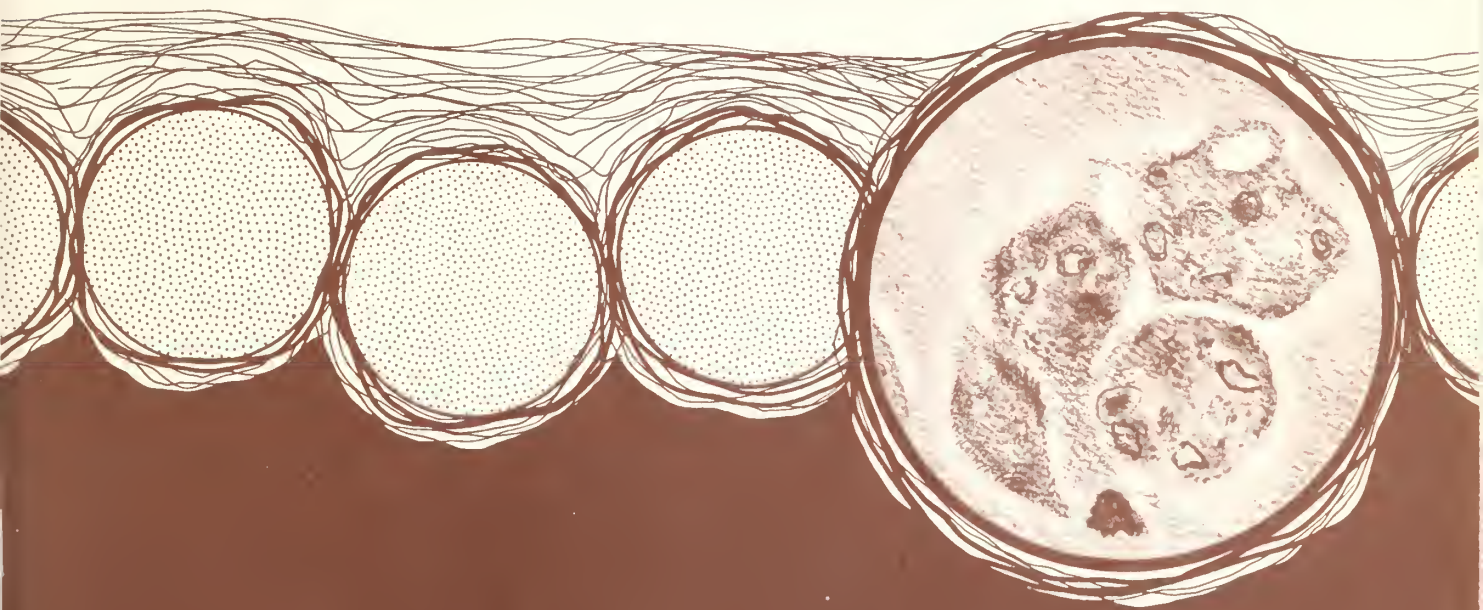


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AN ABRIDGED GLOSSARY OF TERMS USED IN INVERTEBRATE PATHOLOGY



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PACIFIC NORTHWEST FOREST AND RANGE EXPERIMENT STATION
U.S. DEPARTMENT OF AGRICULTURE • FOREST SERVICE • 1967

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AN ABRIDGED GLOSSARY OF TERMS USED IN INVERTEBRATE PATHOLOGY

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INTRODUCTION

IN INVERTEBRATE PATHOLOGY, AS IN OTHER BRANCHES OF SCIENCE, WE ARE IN NEED OF CONSTANT ATTENTION TO AND REVISION OF THE MEANING OF THE TERMS USED TO DESCRIBE OUR FINDINGS. CONTRIBUTIONS TOWARD THIS END ARE EVIDENT IN A NUMBER OF BOOKS AND PAPERS. HOWEVER, THESE PUBLICATIONS DO NOT INCLUDE LISTS OF MANY TERMS WHICH THE STUDENT, RESEARCHER, OR AUTHOR WILL FIND PERTINENT TO HIS WORK. THEREFORE, WE HAVE PREPARED A GLOSSARY OF SELECTED TERMS COMMONLY APPEARING IN THE LITERATURE OF INVERTEBRATE PATHOLOGY, WITH THE HOPE THAT IT MAY BE OF USE TO INVERTEBRATE PATHOLOGISTS AND TO READERS OF INVERTEBRATE PATHOLOGY LITERATURE. WE ALSO HOPE THAT THIS WILL STIMULATE THE STUDENT TO ANALYZE A DEFINITION OR EXPLANATION, AND THAT HE WILL NOT REFRAIN FROM CHALLENGING THE STATUS QUO OR USAGE BY INSTRUCTORS, TEXTBOOKS, AND OTHER 'AUTHORITIES.'

TERMINOLOGY IS A CONVENIENT TOOL BUT NEEDS CONSTANT REPAIR AND IMPROVEMENT IF IT IS TO SERVE ITS PURPOSE IN A SATISFACTORY MANNER. THUS, THE DEFINITIONS AND EXPLANATIONS PRESENTED HERE WILL CHANGE, NEW TERMS WILL APPEAR, AND OBSOLETE TERMS WILL BE DISCARDED.

THE GLOSSARY PRESENTED HERE HAS GROWN OUT OF A SIMILAR LIST OF DEFINITIONS PRESENTED IN 1962 WHEN BOTH AUTHORS WERE ON THE BERKELEY CAMPUS OF THE UNIVERSITY OF CALIFORNIA. AT THAT TIME, IT WAS INTENDED PRIMARILY FOR USE BY STUDENTS ENROLLED IN COURSES IN INSECT PATHOLOGY AT THE UNIVERSITY. DURING THE INTERVENING YEARS, ITS USAGE HAS EXTENDED FAR BEYOND THAT OF THE CLASSROOM. MOREOVER, AS PREDICTED, THOSE INEVITABLE CHANGES HAVE OCCURRED IN THE USE AND MEANING OF WORDS WHICH REQUIRE AN 'UP-DATING' OF THE PREVIOUS GLOSSARY. ACCORDINGLY, WE ARE PRESENTING A REVISED LIST FOR USE BY INVERTEBRATE PATHOLOGISTS GENERALLY, AS WELL AS STUDENTS AND AUTHORS OF PAPERS CONCERNED WITH THE DISEASES OF INVERTEBRATE ANIMALS.

MOST OF THE GLOSSARY TO FOLLOW CONSISTS REALLY NOT SO MUCH OF DEFINITIONS, AS OF EXPLANATIONS TO INDICATE THE GENERAL MEANING OF WORDS AND TERMS AS MOST INVERTEBRATE PATHOLOGISTS MAY PROPERLY EMPLOY THEM. DERIVATIONS, PRONUNCIATIONS, AND VARIATIONS IN MEANING MAY, OF COURSE, BE FOUND IN ANY RELIABLE DICTIONARY OR LEXICON. MOREOVER IT SHOULD BE REMEMBERED THAT THE EXPLANATIONS IN THE PRESENT GLOSSARY ARE DIRECTED PARTICULARLY TO THEIR USE IN INVERTEBRATE PATHOLOGY AND RELATE TO THE SITUATION AS FOUND IN INVERTEBRATES, ESPECIALLY INSECTS. MANY ADDITIONAL TERMS FOUND IN STANDARD REFERENCE WORKS ARE, OF COURSE, ALSO USED IN INVERTEBRATE PATHOLOGY. WITH FEW EXCEPTIONS (E.G., POLYHEDROSIS, GRANULOSIS), THE NAMES OF SPECIFIC DISEASES HAVE NOT BEEN INCLUDED IN THE LIST.

THE DEFINITIONS OR EXPLANATIONS PRESENTED WERE SYNTHESIZED FROM MANY SOURCES, INCLUDING WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY, STEDMAN'S MEDICAL DICTIONARY, AND OTHER WORKS (SEE REFERENCE LIST AT THE END OF THIS GLOSSARY). MANY INDIVIDUAL SCIENTIFIC PAPERS WERE CONSULTED AS WELL. LIBERAL USE OF THESE SOURCES IS HEREBY ACKNOWLEDGED. SOME OF THE DEFINITIONS ARE ORIGINAL OR ARE PROPOSED ANEW. THE COMPILERS ALSO ARE PLEASED TO ACKNOWLEDGE THE HELP OF THEIR COLLEAGUES AND ASSOCIATES WHO EXAMINED THE GLOSSARY AND OFFERED SUGGESTIONS AND ALTERNATE OPINIONS, MANY OF WHICH WERE ADOPTED.

A COMPUTER WAS USED TO PRINT THIS GLOSSARY, AND IT CAN BE REVISED AND REPUBLISHED WITHOUT MUCH EFFORT. THIS IS AN ADVANTAGE, SINCE THIS GLOSSARY, TO REMAIN USEFUL, MUST BE REVISED AT REGULAR INTERVALS. USERS ARE URGED TO ADDRESS THEIR CRITICISM AND SUGGESTIONS TO THE COMPILERS AND TO PROPOSE ADDITIONAL ENTRIES TO BE INCLUDED IN FUTURE EDITIONS.

GLOSSARY

ABNORMALITY. THE QUALITY OR STATE OF BEING ABNORMAL. A DEVIATION FROM THE NORMAL. A STRUCTURE, FUNCTION, OR CONDITION DIFFERENT FROM THE USUAL. A MALFORMATION OR TERATOLOGY. A STATE OF DISEASE.

ACUTE. OF SHORT DURATION. CHARACTERIZED BY SHARPNESS OR SEVERITY. AS 'ACUTE DISEASE.'

ANTIBODIES. SUBSTANCES (MODIFIED BLOOD GLOBULINS IN VERTEBRATES) THAT ARE PRODUCED IN THE BODY OF THE ANIMAL IN RESPONSE TO ENTERING OR INTRODUCED ANTIGENS. IN INVERTEBRATES HUMORAL PROTECTIVE SUBSTANCES, SUCH AS BACTERIOLYSINS, MAY BE FORMED BUT WHETHER OR NOT THEY ARE SIMILAR OR RELATED TO ANTIBODIES FORMED IN VERTEBRATES IS QUESTIONABLE.

ANTIGENS. SUBSTANCES (ESPECIALLY PROTEINS) THAT ARE INTRODUCED OR GAIN ENTRANCE INTO THE BLOOD AND THAT STIMULATE THE PRODUCTION OF ANTIBODIES OR, AS FAR AS INSECTS ARE CONCERNED, OTHER PROTECTIVE, LYTIC, OR CIDAL SUBSTANCES.

APHAGIA. INABILITY TO INGEST.

APLASIA. THE ENTIRE FAILURE OF ORGANS OR TISSUES TO DEVELOP. THE CONGENITAL ABSENCE OF AN ORGAN OR TISSUE.

APOSYMBIOTIC. SEPARATED FROM ITS SYMBIOTES. SYMBIOTE-FREE. USUALLY REFERS TO MUTUALISTIC SYMBIOTES (SEE MUTUALISM).

ATONIA, ATONY. FLACCIDITY. LACK OF TONE OR TENSION.

ATROPHY. (1) DECREASE IN SIZE OF A TISSUE, ORGAN, OR PART AFTER FULL DEVELOPMENT HAS BEEN OBTAINED. A WASTING OF TISSUES, ORGANS, OR ENTIRE BODY FROM DISUSE, OLD AGE, INJURY, OR DISEASE. A CONDITION IN WHICH THE AFFECTED CELLS UNDERGO DEGENERATIVE AND AUTOLYTIC CHANGES, BECOME SMALLER, AND HAVE A LESSENED FUNCTIONAL CAPACITY. (2) IF THERE IS DESTRUCTION OF SOME OF THE CELLS IN A TISSUE WE SPEAK OF 'QUANTITATIVE ATROPHY' (= HYPOPLASIA (2)).

ATTENUATED INFECTION. AN INFECTION WHICH IS NOT IMMEDIATELY FOLLOWED BY OVERT DISEASE. ATTENUATED INFECTION MAY FOLLOW A PHASE OF OVERT DISEASE. SEE ALSO INAPPARENT INFECTION, PROGRESSIVE INFECTION.

ATTENUATION. THE PROCESS OF DECREASING THE VIRULENCE OF A MICRO-ORGANISM.

AUTOINFECTION. INFECTION OF A HOST BY A MICROORGANISM OR VIRUS PRODUCED WITHIN OR UPON THE BODY OF THE SAME INDIVIDUAL HOST.

AXENIC. FREE FROM ASSOCIATED ORGANISMS.

AXENIC CULTIVATION. THE REARING OF ONE OR MORE INDIVIDUALS OF A SINGLE SPECIES IN OR ON A NONLIVING MEDIUM.

- BACTEREMIA.** THE PRESENCE OF BACTERIA IN THE HEMOLYMPH OR BLOOD OF AN INVERTEBRATE, AND OTHER ANIMALS, WITHOUT PRODUCTION OF HARMFUL TOXINS OR OTHER DELETERIOUS EFFECTS.
- BACTERIOCYTE.** A CELL CONTAINING MUTUALISTIC AND COMMENSALISTIC MICROSYMBIOTES DISTINCTLY BACTERIAL IN NATURE. SEE MYCETOCYTE.
- BIOCHEMICAL LESION.** THE INITIAL BIOCHEMICAL CHANGE IN TISSUE CELLS WHICH PRECEDES ANY DAMAGE VISIBLE WITH THE LIGHT MICROSCOPE.
- BIOLOGICAL ASSAY, BIOASSAY.** THE MEASUREMENT OF THE POTENCY OF ANY STIMULUS, PHYSICAL, CHEMICAL, BIOLOGICAL, PHYSIOLOGICAL, OR PSYCHOLOGICAL, BY MEANS OF THE RESPONSE WHICH IT PRODUCES IN LIVING MATTER.
- BIOLOGICAL CONTROL.** THE USE, BY MAN, OF LIVING ORGANISMS TO CONTROL (USUALLY MEANING TO SUPPRESS) UNDESIRABLE ANIMALS AND PLANTS. SOME AUTHORS CONSIDER BIOLOGICAL CONTROL TO BE A PART OF NATURAL CONTROL, AND USE THE TERM TO REFER TO THE ACTION OF PARASITES, PREDATORS, OR PATHOGENS ON A HOST OR PREY POPULATION WHICH PRODUCES A LOWER GENERAL EQUILIBRIUM POSITION THAN WOULD PREVAIL IN THE ABSENCE OF THESE AGENTS. CERTAIN NONORGANISMAL BIOLOGICAL FACTORS, SUCH AS METABOLIC AND GENETIC DISEASES, WHEN USED IN CONTROL MAY BE INCLUDED IN THE CONCEPT OF BIOLOGICAL CONTROL. THAT TYPE OF BIOLOGICAL CONTROL INVOLVING THE USE OF MICROORGANISMS IS USUALLY CALLED 'MICROBIAL CONTROL.'
- BIOTIC INSECTICIDE.** AN ORGANISM USED TO SUPPRESS A LOCAL INSECT PEST POPULATION. TO SOME, THE WORD 'INSECTICIDE' IMPLIES A MORE-OR-LESS TEMPORARY ACTION COMPARABLE TO THAT OF A CHEMICAL INSECTICIDE. OTHERS OBJECT TO THE WORD 'INSECTICIDE' AS MINIMIZING THE DIFFERENCE BETWEEN CHEMICAL AND BIOLOGICAL CONTROL AND AS BEING A SOURCE OF CONFUSION WITH PURELY CHEMICAL PRODUCTS IN THE MINDS OF GROWERS AND OTHERS. IN THE CASE OF A MICROORGANISM, THE TERM 'MICROBIAL INSECTICIDE' IS SOMETIMES PREFERRED.
- CAPSID.** THE PROTEIN COAT OR SHELL OF A VIRUS PARTICLE. THE CAPSID IS A 'SURFACE CRYSTAL,' BUILT OF STRUCTURE UNITS. THE STRUCTURE UNITS ARE THE SMALLEST FUNCTIONALLY EQUIVALENT BUILDING UNITS OF THE CAPSID. THE STRUCTURE UNIT COULD BE A SINGLE POLYPEPTIDE CHAIN OR AN AGGREGATE OF IDENTICAL OR DIFFERENT POLYPEPTIDE CHAINS. IN A SHELL WITH CUBIC SYMMETRY THE STRUCTURE UNITS CAN ASSOCIATE IN A LIMITED NUMBER OF WAYS, FORMING SYMMETRIC CLUSTERS. THESE CLUSTERS ARE THE MORPHOLOGICAL UNITS WHICH MAY BE SEEN WITH THE ELECTRON MICROSCOPE, AND FOR WHICH THE WORD CAPSOMERE HAS BEEN PROPOSED. SEE ALSO NUCLEOCAPSID AND VIRION.
- CAPSOMERE.** A CLUSTER OF STRUCTURE UNITS ARRANGED ON THE SURFACE OF THE NUCLEOCAPSID, IN VIRUSES POSSESSING CUBIC SYMMETRY. THESE CLUSTERS (CAPSOMERES) MAY BE DISCERNED IN ELECTRON MICROGRAPHS OF NEGATIVELY STAINED PREPARATIONS. SEE ALSO CAPSID.

CAPSULE. THE PROTEIN MATERIAL SURROUNDING THE GRANULOSIS-VIRUS ROD. THE 'GRANULE' INCLUSION BODY CHARACTERISTIC OF THAT VIRUS INFECTION KNOWN AS GRANULOSIS, AND PRODUCED IN THE INFECTED TISSUE CELLS.

CARRIER STATE. ONE TYPE OF ATTENUATED INFECTION CHARACTERIZED BY THE PRESENCE OF A PATHOGENIC MICROORGANISM WITHIN OR UPON HOST TISSUES. THERE IS NO EVIDENCE OF OVERT DISEASE IN THE HOST, BUT THE PATHOGEN RETAINS ITS VIRULENCE TOWARDS OTHER MEMBERS OF THE HOST'S SPECIES.

CASE FATALITY RATE. PERCENTAGE OF DEATHS, I.E., THE NUMBER OF DEATHS IN EVERY 100 CASES OF A PARTICULAR DISEASE. COMPARE WITH MORTALITY.

CELL CULTURE. THIS TERM IS USED TO DENOTE THE GROWING OF CELLS IN VITRO, INCLUDING THE CULTURE OF SINGLE CELLS. IN CELL CULTURES THE CELLS ARE NO LONGER ORGANIZED INTO TISSUES. SEE ALSO TISSUE CULTURE, ORGAN CULTURE.

CHRONIC. OF LONG DURATION. NOT ACUTE. AS 'CHRONIC DISEASE.'

CLINICAL PATHOLOGY. A STUDY OF DISEASE BY LABORATORY METHODS. NOT COMMONLY USED IN THE VERNACULAR OF THE INVERTEBRATE PATHOLOGIST.

COMMENSALISM. A SYMBIOTIC RELATIONSHIP IN WHICH ONE OF THE TWO PARTNER SPECIES BENEFITS, WITHOUT APPARENT EFFECTS ON THE OTHER SPECIES. SEE SYMBIOSIS.

COMPLICATION. A MORBID PROCESS OR EVENT OCCURRING DURING A DISEASE, WHICH IS NOT AN ESSENTIAL PART OF THE DISEASE ITSELF, THOUGH IT MAY RESULT FROM IT OR FROM INDEPENDENT CAUSES.

CONTAGIOUS OR COMMUNICABLE DISEASE. DISEASE WHICH IS NATURALLY TRANSMITTED BY CONTACT, EITHER DIRECT OR MEDIATE.

CONTAMINATION. HARBORING OF OR CONTACT WITH MICROORGANISMS (OR OTHER ORGANISMS SUCH AS INSECT PARASITES) IN ABSENCE OF A RELATIONSHIP WHICH MAY BE CONSIDERED COMMENSALISTIC, MUTUALISTIC, OR PARASITIC (SEE COMMENSALISM, MUTUALISM, PARASITISM).

CONTROL OR CHECK. (1) SOMETHING THAT AFFORDS A STANDARD OF COMPARISON OR MEANS OF VERIFICATION. (2) CONTROL (BIOLOGICAL, CHEMICAL, ETC.) OF INSECTS AND OTHER UNDESIRABLE ANIMALS--THE MAINTENANCE OF OR THE EFFORT TO MAINTAIN A POPULATION DENSITY BELOW THE POINT WHERE INJURY TO MAN'S INTERESTS OCCURS.

CYTOCIDAL. THAT WHICH KILLS CELLS.

DEFAUNATE. TO REMOVE FROM AN ORGANISM ITS COMMENSALISTIC OR MUTUALISTIC MICROFAUNA, FOR WHICH THE ORGANISM ORDINARILY SERVES AS A HOST. SUCH AS REMOVING FLAGELLATES FROM THE ALIMENTARY TRACT OF TERMITES. (SEE COMMENSALISM, MUTUALISM).

DEFICIENCY DISEASE. A DISEASE RESULTING FROM LACK OF CARBOHYDRATES, PROTEINS, AMINO ACIDS, FATTY ACIDS, VITAMINS, OR TRACE MINERALS, OR OTHER ESSENTIAL CONSTITUENTS AND ELEMENTS OF THE DIET.

DENSITY, POPULATION. SEE POPULATION DENSITY.

DENSITY-DEPENDENT FACTORS. FACTORS WHOSE EFFECTS ON A POPULATION ARE DEPENDENT UPON THE DENSITY OF THAT PARTICULAR POPULATION. DENSITY DEPENDENCE MAY BE DIRECT OR INVERSE.

DENSITY-INDEPENDENT FACTORS. FACTORS WHOSE EFFECTS ON A POPULATION ARE NOT DEPENDENT UPON THE DENSITY OF THAT PARTICULAR POPULATION.

DIAGNOSIS. TO DISTINGUISH ONE DISEASE FROM ANOTHER. THE DETERMINATION OF A DISEASE FROM ITS SIGNS, SYMPTOMS, ETIOLOGY, PATHOGENESIS, PHYSIOPATHOLOGY, MORPHOPATHOLOGY, ETC. ALSO, THE DECISION REACHED.

DIATAXY. IN BIOSYNTHESIS, DIATAXY AND DIATACTIC REFER TO THE ORDERING OF BUILDING BLOCKS (E.G., AMINO ACIDS, NUCLEIC BASES) INTO SPECIFIC SEQUENCES (E.G., PROTEINS, NUCLEIC ACIDS). THE SYNTHESIS OF BUILDING BLOCKS INVOLVES ONLY ENZYMES. DIATAXY REQUIRES A TEMPLATE (E.G., THE RIBOSOME-MESSENGER SYSTEM).

DIATHESIS. AN INHERITED CONSTITUTIONAL STATE WHEREBY AN INDIVIDUAL IS ESPECIALLY LIABLE TO A CERTAIN DISEASE.

DIRECT CAUSES. THOSE FACTORS OR AGENTS WHICH CAUSE DISEASE DIRECTLY, INCLUDING POISONS, MICROORGANISMS, ENTOMOPHAGOUS PARASITES, PHYSICAL OR MECHANICAL AGENTS, GLANDULAR DISTURBANCES AND NUTRITIONAL DEFICIENCIES. AT TIMES A SINGLE AGENT MAY BE BOTH A PREDISPOSING AND A DIRECT AGENT-- COLD MAY PREDISPOSE TO BACTERIAL INFECTION AND ALSO BE THE DIRECT CAUSE OF TISSUE DEATH BY FREEZING. ALSO CALLED 'PRIMARY ETIOLOGIC FACTORS.'

DISEASE. (SEE ALSO SYNDROME.) 'LACK OF EASE.' DEPARTURE FROM THE STATE OF HEALTH OR NORMALITY. CONDITION OR PROCESS THAT REPRESENTS THE RESPONSE OF AN ANIMAL'S BODY TO INJURY OR INSULT. A DISTURBANCE OF FUNCTION OR STRUCTURE OF A TISSUE OR ORGAN OF THE BODY, OR OF THE BODY IN GENERAL. (A HEALTHY ANIMAL IS ONE SO WELL-ADJUSTED IN ITS INTERNAL MILIEU AND TO ITS EXTERNAL ENVIRONMENT THAT IT IS CAPABLE OF CARRYING ON ALL THE FUNCTIONS ULTIMATELY NECESSARY FOR ITS MAINTENANCE, GROWTH, AND MULTIPLICATION WITH THE LEAST EXPENDITURE OF ENERGY.) THERE ARE MANY DEFINITIONS OF THE TERM DISEASE. THE FOLLOWING ARE EXAMPLES OF THE MOST SIGNIFICANT INTERPRETATIONS OF THE WORD DISEASE.

'DISEASE, THEN, IS A PROCESS, NOT A THING AND REPRESENTS THE RESPONSE OF THE BODY TO INJURY OR INSULT. ... WHEN THE RANGE OF EASY TOLERANCE WITHIN WHICH AN ORGANISM CAN FUNCTION WITHOUT TOO GREAT A STRAIN IS PASSED, THE ORGANISM MAY BE SAID TO BE DISEASED OR IN A PATHIC STATE.'
(BIRKELAND 1942)

'HEALTH AND DISEASE ARE RELATIVE CONCEPTS WHICH DO NOT EASILY LEND THEMSELVES TO SIMPLE DEFINITION. DISEASE CORRESPONDS TO FAILURES OR DISTURBANCES IN THE GROWTH, DEVELOPMENT, FUNCTIONS, AND ADJUSTMENTS OF THE ORGANISM AS A WHOLE OR OF ANY OF ITS SYSTEMS. ... THE BROAD DEFINITION OF DISEASE DOES NOT CONFINE OUR ATTENTION TO

ANY SINGLE SYSTEM OR ORGANIZATION OF THE BODY. IT PERMITS US TO CONCEPTUALIZE DISTURBANCES OR FAILURES AT ALL LEVELS OF ORGANIZATION--BIOCHEMICAL, CELLULAR, ORGAN, PSYCHOLOGICAL, INTERPERSONAL, OR SOCIAL--AND TO CONSIDER THEIR INTER-RELATIONSHIPS. FURTHER, IT DOES NOT RESTRICT US TO ANY SINGLE ETIOLOGIC CONCEPT BUT PERMITS THE APPLICATION OF A MULTI-FACTOR CONCEPT.'

(ENGEL 1960)

DISEASE--ANY DESTRUCTIVE PROCESS WHATEVER, NO MATTER HOW SMALL OR OF HOW SHORT DURATION, COMES WITHIN THE MEANING OF THE TERM. NOT ONLY ARE PNEUMONIA AND TYPHOID FEVER DISEASES IN THIS SENSE, SO IS A BROKEN LEG OR A CUT OR BRUISED FINGER.'

(WHITE 1926)

'THE CHEMICAL REACTIONS OF THE CELL ARE NOT A SERIES OF ISOLATED REACTIONS, BUT ARE ALL IN DYNAMIC EQUILIBRIUM. INTERFERENCE WITH ONE REACTION WILL THEREFORE AFFECT THE WHOLE SYSTEM TO VARYING DEGREES.'....'DISEASE CAN THUS BE CONSIDERED AS THE MODIFICATIONS IN CELLULAR METABOLISM PRODUCED BY PATHOGENIC AGENTS.'

(DAWKINS AND REES 1959)

DISPERSAL AND SPREAD. THE EXTENT TO WHICH A SPECIES LEAVES ITS ACCUSTOMED HABITAT OR AREA. DISPERSAL MOVEMENTS ARE USUALLY INDETERMINATE AND AT RANDOM. THE SPECIES WILL OCCASIONALLY BE TAKEN OUTSIDE ITS GEOGRAPHIC RANGE, BUT SUCCESSFUL COLONIZATION OF NEW AREAS DOES NOT OCCUR AND SPREAD DOES NOT RESULT. THE WORD 'SPREAD' HAS BEEN DEFINED (SMITH 1959) AS A MOVEMENT BY SOME PORTION OF A SPECIES THAT RESULTS IN A MAJOR MODIFICATION OF ITS GEOGRAPHICAL RANGE.

ECLIPSE PERIOD. IN THE DEVELOPMENTAL CYCLE OF VIRUSES, A PHASE OR PERIOD, OCCURRING IMMEDIATELY AFTER INFECTION (I.E., IMMEDIATELY AFTER A VIRUS ENTERS THE HOST CELL), IN WHICH INFECTIVE PARTICLES CANNOT BE DETECTED. THE PHASE DURING WHICH THE INFECTED HOST CELL CONTAINS NO MATERIAL CAPABLE OF INFECTING ANOTHER CELL OR ANOTHER HOST.

ENDOTOXINS. SUBSTANCES PRODUCED BY MICROORGANISMS WHICH ARE NOT SECRETED INTO THE SURROUNDING MEDIUM BUT ARE CONFINED WITHIN THE MICROBIAL CELL. THEY ARE RELEASED AFTER AUTOLYSIS.

ENTOMIC. ADJECTIVAL FORM RELATING TO INSECTS.

ENTOMOGENOUS. REFERS TO (MICRO)ORGANISMS GROWING IN OR ON THE BODIES OF INSECTS. CONNOTES PARASITIC OR OTHER INTIMATE SYMBIOTIC RELATIONSHIP (SEE PARASITISM, SYMBIOSIS).

ENTOMOPHAGOUS. INSECTIVOROUS. REFERS TO THE CONSUMPTION OF INSECTS OR THEIR PARTS.

ENTOMOPHILIC. USED TO COVER THE ASSOCIATIONS BETWEEN INSECTS AND PLANT MICROORGANISMS, INSECTS AND PROTOZOA, AND INSECTS AND NEMATODES. 'INSECT-LOVING.'

ENTOMOPHYTE OR ENTOPHYTE. A PLANT LIVING WITHIN OR ON THE BODY OF THE INSECT.

ENTOMOPHYTIC. REFERS TO ALMOST ANY RELATIONSHIP BETWEEN PLANT MICRO-ORGANISMS (BACTERIA AND FUNGI) AND INSECTS. DO NOT USE WHEN REFERRING TO PROTOZOA.

ENZOOTIC DISEASE. A DISEASE (USUALLY IN LOW INCIDENCE) WHICH IS CONSTANTLY PRESENT IN A POPULATION.

EPIZOOTIC. AN OUTBREAK OF DISEASE IN WHICH THERE IS AN UNUSUALLY LARGE NUMBER OF CASES. A DISEASE OR A PHASE OF A DISEASE OF HIGH MORBIDITY AND ONE THAT IS ONLY IRREGULARLY PRESENT IN RECOGNIZABLE FORM. SEE ALSO PANZOOTIC.

EPIZOOTIC WAVE. A DISEASE PHENOMENON IN ANIMAL POPULATIONS CHARACTERIZED BY IMPORTANT ATTRIBUTES, AS THE NUMBER OF INDIVIDUAL ORGANISMS AFFLICTED BY A GIVEN DISEASE IN A CERTAIN AREA, AND THE MANNER IN WHICH THIS NUMBER INCREASES AND DECREASES IN A GIVEN PERIOD OF TIME.

EPIZOOTIOLOGY. THE FIELD CONCERNED WITH THE STUDY OF DISEASES OF THE ANIMAL ON THE BASIS OF MASS PHENOMENA. CONCERNED WITH DISEASES AS THEY OCCUR IN GROUPS OF ANIMALS (INCLUDING INVERTEBRATES) RATHER THAN IN THE INDIVIDUAL ANIMAL.

ERADICATION. THE REMOVAL OF ALL RECOGNIZABLE UNITS OF THE INFECTING AGENT FROM THE HOST. CONSEQUENTLY, THE REAPPEARANCE OF THE INFECTING AGENT IN THE HOST SHOULD BE TRACEABLE TO EXOGENOUS RE-INFECTION. ALSO--THE COMPLETE REMOVAL, DESTRUCTION, OR EXTIRPATION OF A LIVING ORGANISM FROM ITS ENVIRONMENT.

ETIOLOGY. THE STUDY OF THE CAUSES OF DISEASE.

EXOTOXINS (ALSO CALLED 'ECTOTOXINS,' 'TRUE TOXINS,' AND 'SOLUBLE TOXINS'). POISONOUS SUBSTANCES PRODUCED BY THE MICROBIAL CELL AND LIBERATED INTO THE SURROUNDING ENVIRONMENT, WITHOUT DESTRUCTION OF THE CELL.

EXPLANT. AN EXCISED FRAGMENT OF A TISSUE OR AN ORGAN USED TO INITIATE AN IN VITRO CULTURE.

GENOME. THE GENETIC MATERIAL OF AN ORGANISM. MORE SPECIFICALLY, A SET OF CHROMOSOMES WITH THE GENES THEY CONTAIN. IN INVERTEBRATE PATHOLOGY THE WORD IS COMMONLY USED IN REFERENCE TO VIRUSES AND PATHOGENIC MICROORGANISMS.

GNOTOBIOTICS. FIELD OF BIOLOGY CONCERNED WITH BREEDING OR CULTURING OF ORGANISMS BY THEMSELVES OR IN ASSOCIATION WITH OTHER COMPLETELY KNOWN KINDS OF ORGANISMS. (ADJ.--GNOTOBIOTIC.)

GRADATION. THE TIME INTERVAL BETWEEN ONE LOWEST POINT OF THE DENSITY OF AN ANIMAL POPULATION AND THE NEXT, THUS INCLUDING ONE FULL WAVE OF THE NUMERICAL FLUCTUATION OF THE POPULATION.

GRANULOSIS. A VIRUS DISEASE OF CERTAIN INSECTS CHARACTERIZED BY THE PRESENCE OF MINUTE GRANULAR INCLUSIONS (CAPSULES, WHICH SEE) IN INFECTED CELLS. (ONE SPEAKS OF A 'GRANULOSIS VIRUS' BUT THE INCLUSION BODY ITSELF IS REFERRED TO AS A 'CAPSULE.')

GROSS PATHOLOGY. THE STUDY OF MACROSCOPIC STRUCTURAL LESIONS. ABNORMALITIES OF GROSS STRUCTURE. DISTINGUISHED FROM HISTOPATHOLOGY (WHICH SEE).

HISTOCHEMISTRY. THE MICROSCOPIC STUDY OF THE CHEMICAL CHARACTERISTICS OF TISSUES, THROUGH THE USE OF SUBSTANCES (DYES, ETC.) PRODUCING IDENTIFYING CHEMICAL REACTIONS.

HISTOPATHOLOGY. A STUDY OF ABNORMAL MICROSCOPIC CHANGES IN THE TISSUE STRUCTURE OF AN INVERTEBRATE ANIMAL (OR OTHER ORGANISM).

HOLIDIC. PERTAINING TO A MEDIUM (USED FOR GROWING ORGANISMS) WHOSE INTENDED CONSTITUENTS, OTHER THAN PURIFIED INERT MATERIALS, HAVE EXACTLY KNOWN CHEMICAL STRUCTURE BEFORE THE MEDIUM IS COMPOUNDED. SEE ALSO MERIDIC, OLIGIDIC.

HYPERPLASIA. AN INCREASE IN THE NUMBER OF FUNCTIONAL UNITS OF AN ORGAN (ORGANELLES, CELLS, TISSUES), EXCLUDING TUMOR FORMATION, WHEREBY THE BULK OF THE ORGAN IS INCREASED IN RESPONSE TO INCREASED FUNCTIONAL DEMANDS. SEE ALSO HYPERTROPHY. (GOSS 1966)

HYPERTROPHY. AN INCREASE IN SIZE (WEIGHT) AND FUNCTIONAL CAPACITY OF AN ORGAN OR TISSUE, WITHOUT AN INCREASE IN THE NUMBER OF STRUCTURAL UNITS UPON WHICH THEIR FUNCTIONS DEPEND. HYPERTROPHY IS USUALLY STIMULATED BY INCREASED FUNCTIONAL DEMANDS. SEE ALSO HYPERPLASIA. (GOSS 1966)

HYPOPLASIA. (1) A DEFECTIVE OR INCOMPLETE DEVELOPMENT OF AN ORGAN SYSTEM, ORGAN, OR TISSUE. A HYPOPLASTIC ORGAN OR TISSUE IS ONE THAT NEVER REACHES NORMAL SIZE. (2) SOMETIMES USED TO INDICATE AN ATROPHY CAUSED BY THE DESTRUCTION OF SOME OF THE ELEMENTS (E.G., CELLS) RATHER THAN A GENERAL REDUCTION IN SIZE (= 'QUANTITATIVE ATROPHY').

IMMUNITY. A TYPE OF RESISTANCE TO DISEASE. USUALLY CONSIDERED AN ACQUIRED STATE IN WHICH AN ORGANISM IS CAPABLE OF RESISTING A PATHOGEN AND THUS RESISTING THE DEVELOPMENT OF A DISEASE.

IMMUNIZATION. THE PROCESS OF INCREASING THE RESISTANCE OF THE HOST.

INANITION. EXHAUSTION FROM LACK OF NUTRIENTS. THE PHYSICAL CONDITION RESULTING FROM THE COMPLETE LACK OF NUTRIENTS.

INAPPARENT INFECTION. AN INFECTION WHICH GIVES NO OVERT SIGN OF ITS PRESENCE. (IN HUMAN MEDICINE THE WORD 'SUBCLINICAL' MAY BE USED AS AN ALTERNATIVE.) ALSO CALLED 'ATTENUATED INFECTION.'

INCIDENCE. RATE OF OCCURRENCE. E.G., 'INCIDENCE OF NUCLEAR POLYHEDROSIS IN A GROUP OR POPULATION OF INSECTS.'

INCIDENCE OF DISEASE. DEGREE OF OCCURRENCE OF A DISEASE IN A PARTICULAR POPULATION. THE RATIO OF DISEASED INDIVIDUALS TO TOTAL NUMBER OF INDIVIDUALS IN A GIVEN POPULATION.

INCITANT. A FACTOR THAT INCITES OR ACTIVATES OCCULT PATHOGENS.

INCUBATION PERIOD. THE PERIOD OF TIME ELAPSING BETWEEN ENTRANCE OR INTRODUCTION OF MICROORGANISMS IN THE ANIMAL BODY AND THE DEVELOPMENT OF SYMPTOMS AND SIGNS OF AN INFECTIOUS DISEASE.

INDUCTION. THE ACTIVATION OF AN OCCULT PATHOGEN, LEADING TO PROGRESSIVE INFECTION AND DISEASE. IN PARTICULAR, THE PROVOKED TRANSFORMATION OF A PROVIRUS INTO A VIRULENT (CYTOCIDAL) VIRUS.

INFAUNATE. TO INTRODUCE A COMMENSAL OR MUTUALISTIC MICROFAUNA INTO AN ORGANISM THAT IS CAPABLE OF SERVING AS A HOST. THE INTRODUCTION OF CERTAIN FLAGELLATES OR CILIATES IN A DEFAUNATED (WHICH SEE) TERMITE CONSTITUTES AN INFAUNATION.

INFECTION. THE INTRODUCTION OR ENTRY OF A PATHOGENIC MICROORGANISM INTO A SUSCEPTIBLE HOST, RESULTING IN THE PRESENCE OF THE MICROORGANISM WITHIN THE BODY OF THE HOST, WHETHER OR NOT THIS CAUSES DETECTABLE PATHOLOGIC EFFECTS (OR OVERT DISEASE). IN THE CASE OF THE VIRUSES, AN INFECTION HAS BEEN DEFINED AS THE INTRODUCTION INTO A CELL OR AN ORGANISM OF AN ENTITY ABLE TO MULTIPLY, ABLE TO PRODUCE DISEASE, AND ABLE TO REPRODUCE ORGANIZED INFECTIVE ENTITIES. PATHOGENICITY, TO BE CONSIDERED SEPARATELY FROM INFECTIVITY, IS ONLY A POTENTIAL FEATURE OF VIRUSES AND MANY OTHER INFECTIOUS AGENTS. SEE ALSO ATTENUATED INFECTION, PROGRESSIVE INFECTION, SECONDARY INFECTION, AUTOINFECTION, REINFECTION, SUPERINFECTION.

INFECTION, ATTENUATED. SEE ATTENUATED INFECTION.

INFECTION, PROGRESSIVE. SEE PROGRESSIVE INFECTION.

INFECTION, SECONDARY. SEE SECONDARY INFECTION.

INFECTIOUS DISEASE. DISEASE CAUSED BY THE ACTIONS OF A LIVING ORGANISM.

INFECTIVE PHASE. THE LAST PHASE OF THE DEVELOPMENTAL CYCLE OF A VIRUS, IN WHICH THE VIRUS ACQUIRES INFECTIVITY. THE END RESULT OF THE ASSEMBLING OF THE GENOME AND PROTEINS OF A VIRUS DURING THE MATURATION PHASE.

INFECTIVITY. THE QUALITY OF BEING INFECTIVE. THE ABILITY TO PRODUCE INFECTION.

INFESTATION. THE LIVING IN OR ON A HOST BY METAZOAN PARASITES, SUCH AS AN INFESTATION OF FLIES BY MITES. SOME AUTHORS LIMIT 'INFEST' AND 'INFESTATION' TO EXTERNAL ORGANISMS, IN MOST CASES VISIBLE TO THE NAKED EYE.

INHERITED DISEASE. A DISEASE WHICH ARISES FROM THE GERM PLASM OF THE PARENT. ABNORMAL CHARACTERS OR QUALITIES DETERMINED BY INHERITANCE, AND THAT ARE TRANSMITTED FROM PARENT TO OFFSPRING.

INJURY. DAMAGE. WOUND. TRAUMA.

INQUILINISM. A TYPE OF SYMBIOTIC RELATIONSHIP IN WHICH NEITHER OF THE TWO PARTNERS BENEFITS OR SUFFERS HARM. IT IS NOT OBLIGATE. SEE ALSO TRANSPORT HOST.

INTEGRATED CONTROL. THE INTEGRATION OF THE ACTIVITIES OF NATURAL ENEMIES OF PEST ORGANISMS WITH CULTURAL, PHYSICAL, AND/OR CHEMICAL CONTROL MEASURES. APPLIED PEST CONTROL THAT COMBINES AND INTEGRATES BIOLOGICAL CONTROL AND CHEMICAL CONTROL.

INTOXICATION. POISONING. INCLUDES POISONING BY TOXINS.

INTRAHEMOCOELIC. WITHIN THE HEMOCOEL OR PERIVISCERAL CAVITY OF AN INVERTEBRATE. AS IN 'INTRAHEMOCOELIC INJECTION.'

INVASION. THE PENETRATION BY A MICROORGANISM OF THE INTEGUMENT AND OTHER EPITHELIAL BARRIERS OF THE BODY OF A HOST ORGANISM. 'PRIMARY INVASIVENESS' IS A PROPERTY OF PATHOGENIC MICROORGANISMS.

IN VITRO. IN THE 'TEST TUBE,' OR OTHER ARTIFICIAL ENVIRONMENT. OUTSIDE A LIVING ORGANISM.

IN VIVO. IN THE LIVING ORGANISM.

LATENT INFECTION. AN INAPPARENT INFECTION IN WHICH THE PATHOGEN IS STILL PRESENT IN A NONINFECTIVE PHASE, AND IN WHICH A CERTAIN PATHOGEN-HOST EQUILIBRIUM IS ESTABLISHED. THE ADJECTIVE 'LATENT' IS RESERVED TO QUALIFY 'INFECTION,' THUS ONE SPEAKS OF 'A LATENT INFECTION' BUT NOT OF 'A LATENT VIRUS' (SEE OCCULT).

LESION. (1) A WOUND OR INJURY. (2) ANY MORE OR LESS CIRCUMSCRIBED PATHOLOGIC CHANGE IN THE TISSUES, INCLUDING A CHANGE OR LOSS OF FUNCTION. SEE BIOCHEMICAL LESION.

MATURATION PHASE. IN VIRUS INFECTIONS, A PHASE OR PERIOD FOLLOWING THE ECLIPSE PERIOD, DURING WHICH INFECTIVE PARTICLES ARE COMPLETED. SEE ALSO--VEGETATIVE PHASE.

MAXIMAL NONLETHAL DOSE. THE DOSE WHICH WILL JUST FAIL TO KILL ALL OR MOST OF THE SUBJECTS OF A GIVEN SPECIES OR STRAIN. (THE USE OF THIS TERM IS NOT RECOMMENDED, AS IT DOES NOT TAKE ACCOUNT OF THE VARIATION IN TOLERANCE WITHIN A SPECIES OR STRAIN.)

MEDIAN EFFECTIVE DOSE. THE DOSE WHICH WILL PRODUCE A RESPONSE IN HALF THE TEST SUBJECTS. THE CHIEF CHARACTERISTIC OF THIS DOSE IS THAT IT IS AN INDIRECT MEASURE OF THE MEAN TOLERANCE OF A BATCH OF TEST SUBJECTS. ITS SYMBOL IS ED50. THE MEDIAN LETHAL DOSE (LD50) IS A SPECIAL CASE, IN WHICH DEATH IS THE RESPONSE.

MEDIAN LETHAL DOSE. A MORE RESTRICTED CONCEPT OF MEDIAN EFFECTIVE DOSE. THE DOSE WHICH WILL PRODUCE DEATH IN HALF THE TEST SUBJECTS. ITS SYMBOL IS LD50.

MERIDIC. PERTAINING TO A MEDIUM (USED FOR GROWING ORGANISMS) IN WHICH THE CHEMICAL IDENTITY OF CERTAIN, BUT NOT ALL, OF THE ABSOLUTELY ESSENTIAL MOLECULES HAS BEEN ESTABLISHED. SEE ALSO HOLIDIC, OLIGIDIC.

METASTASIS. THE APPEARANCE OF MALIGNANT NEOPLASMS IN PARTS OF THE BODY REMOTE FROM THE SEAT OF THE PRIMARY TUMOR.

MICROBIAL CONTROL. THAT PART OF BIOLOGICAL CONTROL CONCERNED WITH CONTROLLING INSECTS (OR OTHER ORGANISMS) BY THE USE OF MICROORGANISMS (INCLUDING VIRUSES). PATHOGENS MAY EXERT THEIR CONTROLLING EFFECT BY MEANS OF THEIR INVASIVE PROPERTIES, BY TOXINS, ENZYMES, AND OTHER SUBSTANCES. (SOME AUTHORS LIMIT THE TERM TO THAT PHASE OF BIOLOGICAL CONTROL CONCERNED WITH THE EMPLOYMENT BY MAN OF MICROORGANISMS FOR THE CONTROL OF INSECTS (OR OTHER FORMS OF LIFE).)

MICROBIAL INSECTICIDE. A PATHOGENIC MICROORGANISM OR ITS PRODUCTS (TOXINS, ETC.) USED TO SUPPRESS AN INSECT POPULATION. THE TERMS 'MICROBIAL PESTICIDE,' 'BIOTIC INSECTICIDE,' AND 'MICROBIAL CONTROL PRODUCT' ARE ALSO USED. (SEE ALSO BIOTIC INSECTICIDE.)

MICROBIAL PERSISTENCE. A PHENOMENON CHARACTERIZED BY THE CONTINUED PRESENCE OF A PATHOGENIC MICROORGANISM WITHIN THE HOST IN THE ABSENCE OF OVERT DISEASE BUT FOLLOWING AN EPISODE OF OVERT DISEASE.

MICROBIOTA. THE COMBINED MICROFLORA AND MICROFAUNA OF AN ORGANISM. OR, THE MICROFLORA OR MICROFAUNA CONSIDERED SEPARATELY.

MICROFEEDING. A TERM SOMETIMES USED TO DESIGNATE FORCED FEEDING OF SMALL VOLUMES OF SOLUTIONS OR SUSPENSIONS TO INSECTS AND OTHER SMALL ANIMALS. PERORAL INOCULATION, USING MICROCATETERS. BY SOME, MICROFEEDING IS USED TO INDICATE ACTIVE EATING OF SMALL MEASURED AMOUNTS OF FLUIDS OR SOLIDS.

MICROINJECTOR. A DEVICE FOR INJECTING MEASURED, MINUTE AMOUNTS OF FLUIDS. COMPOSED USUALLY OF A FINE METAL OR GLASS NEEDLE ADAPTED TO A SYRINGE, AND OF A MECHANISM FOR THE ADVANCEMENT OF THE PISTON (MICROMETER OR RATCHET).

MICROSYMBIOTE. THIS TERM IS SOMETIMES USED TO DESIGNATE THE SMALLER ORGANISM, OR MICROORGANISM, OF A SYMBIOTIC ASSOCIATION. SEE ALSO SYMBIOTE.

MINIMAL LETHAL DOSE. ACCORDING TO THE MOST COMMON USE IN THE LITERATURE, THIS IS THE DOSE JUST SUFFICIENT TO KILL ALL OR MOST SUBJECTS OF A GIVEN SPECIES OR STRAIN. THE USE OF THIS TERM IS NOT RECOMMENDED (SEE MAXIMAL NONLETHAL DOSE).

MORBIDITY. REFERS TO SICKNESS OR DISEASE. A DISEASED STATE. THE INCIDENCE OF DISEASE.

MORPHOPATHOLOGY. THAT BRANCH OF PATHOLOGY DEALING WITH THE MORBID CHANGES OCCURRING IN THE STRUCTURE OF CELLS, TISSUES, AND ORGANS, AS DISTINGUISHED FROM PHYSIOPATHOLOGY.

MORTALITY. REFERS TO DEATH, AS MORBIDITY REFERS TO DISEASE. DEATH RATE--THE PROPORTION OF DEATHS IN A POPULATION OR A PART OF A POPULATION. THE PROPORTION OF THE DEATHS FROM ANY GIVEN DISEASE TO THE TOTAL NUMBER OF DEATHS FROM ALL CAUSES IS FREQUENTLY REFERRED TO AS THE 'PERCENTAGE OR PROPORTIONATE MORTALITY RATE.'

MUTUALISM. A SYMBIOTIC RELATIONSHIP BETWEEN TWO DIFFERENT SPECIES IN WHICH BOTH JOINTLY BENEFIT. USUALLY OBLIGATORY.

MYCETHEMIA. THE PRESENCE OF A FUNGUS OR SOME OF ITS STAGES IN THE CIRCULATING BLOOD OF AN ANIMAL.

MYCETOCYTE. A CELL CONTAINING INTRACELLULAR MUTUALISTIC AND COMMENSALISTIC MICROSymbiotes. ONE OF MANY CELLS MAKING UP THE MYCETOME.

MYCETOME. IN VARIOUS INVERTEBRATE ANIMALS, THE STRUCTURE OR ORGAN WHICH HOUSES SYMBIOTES. THE CELLS MAKING UP THE MYCETOME AND CONTAINING THE SYMBIOTES ARE KNOWN AS MYCETOCYTES.

MYCOTOXICOSIS. A DISEASE CAUSED BY THE ACTION OF A MYCOTOXIN. SEE TOXINOSIS, TOXEMIA.

MYCOTOXIN. A TOXIN PRODUCED BY FUNGI.

NECROTIZE. TO KILL CELLS AND TISSUES IN A LIVING ORGANISM.

NEOPLASM. NEOPLASTIC TUMOR. A NEW GROWTH OF TISSUE CELLS WHICH IS (A) NOT INFLAMMATORY, (B) NOT REQUIRED FOR THE REPAIR OF ORGANS, AND (C) NOT CONFORMING TO NORMAL GROWTH PATTERN. A NEOPLASM MAY BE BENIGN OR MALIGNANT. 'CANCER' REFERS TO ANY TYPE OF MALIGNANT NEOPLASMS.

NUCLEOCAPSID. THE STRUCTURE COMPOSED OF THE CAPSID WITH THE ENCLOSED VIRAL NUCLEIC ACID. SOME NUCLEOCAPSIDS ARE NAKED, OTHERS ARE ENCLOSED IN AN ENVELOPE (OR LIMITING MEMBRANE). SEE ALSO CAPSOMERE, VIRION.

OCCULT. A PHASE OF A PATHOGEN'S CYCLE (USUALLY VIRUSES) IN WHICH THE PATHOGEN CANNOT BE DETECTED AND IN WHICH ITS STATE DIFFERS FROM THE INFECTIVE PHASE. SYNONYMOUS WITH, BUT PREFERABLE TO 'HIDDEN VIRUS.' ONE SPEAKS OF 'AN OCCULT VIRUS' RATHER THAN 'A LATENT VIRUS.' (SEE LATENT INFECTION.)

OLIGIDIC. PERTAINING TO A MEDIUM (USED FOR GROWING ORGANISMS) CONSISTING WHOLLY OR LARGELY OF CRUDE MATERIALS, IN WHICH NO MOLECULE (OTHER THAN WATER) HAS BEEN ESTABLISHED AS AN ABSOLUTE NUTRITIONAL REQUIREMENT. SEE ALSO HOLIDIC, MERIDIC.

ORGAN CULTURE. THE MAINTENANCE OR GROWTH OF ORGAN PRIMORDIA OR THE WHOLE OR PARTS OF AN ORGAN IN VITRO IN A WAY THAT MAY ALLOW DIFFERENTIATION AND PRESERVATION OF THE ARCHITECTURE AND/OR FUNCTION. SEE ALSO CELL CULTURE, TISSUE CULTURE.

PANZOOTIC. DENOTING A DISEASE AFFECTING ALL, OR A LARGE PROPORTION OF THE ANIMALS OF A REGION. EXTENSIVELY EPIZOOTIC.

PARASITE. AN ORGANISM THAT LIVES AT ITS HOST'S EXPENSE, OBTAINING NUTRIMENT FROM THE LIVING SUBSTANCE OF THE LATTER, DEPRIVING IT OF USEFUL SUBSTANCE, OR EXERTING OTHER HARMFUL INFLUENCE UPON IT. SOME AUTHORS DISTINGUISH 'PARASITE' FROM 'PARASITOID,' THE LATTER HAVING AMONG OTHERS THE FOLLOWING TWO CHARACTERISTICS--

(A) THE DEVELOPMENT OF AN INDIVIDUAL DESTROYS ITS HOST, (B) IT IS PARASITIC AS A LARVA ONLY, THE ADULT BEING FREE-LIVING. E.G., THE ENTOMOPHAGOUS HYMENOPTERA ARE PARASITOIDS.

PARASITISM. A SYMBIOTIC RELATIONSHIP BETWEEN INDIVIDUALS OF TWO DIFFERENT SPECIES IN WHICH ONE (THE HOST) IS HARMED AND THE OTHER (THE PARASITE) PROFITS.

PARASITOID. SEE PARASITE.

PAROXYSM. A SUDDEN ONSET OF SYMPTOMS, ESPECIALLY IN DISEASES WITH RECURRENT MANIFESTATIONS.

PATHOGEN. A SPECIFIC CAUSE OF DISEASE. A MICROORGANISM CAPABLE OF PRODUCING DISEASE UNDER NORMAL CONDITIONS OF HOST RESISTANCE AND RARELY LIVING IN CLOSE ASSOCIATION WITH THE HOST WITHOUT PRODUCING DISEASE. ANY MICROORGANISM, VIRUS, SUBSTANCE OR FACTOR CAUSING DISEASE.

PATHOGENESIS. THE ORIGINATION AND DEVELOPMENT OF A DISEASE OR MORBID PROCESS.

PATHOGENICITY. THE QUALITY OR STATE OF BEING PATHOGENIC. THE POTENTIAL ABILITY TO PRODUCE DISEASE. APPLIED TO GROUPS OR SPECIES OF MICROORGANISMS, WHEREAS VIRULENCE IS USED IN THE SENSE OF DEGREE OF PATHOGENICITY WITHIN THE GROUP OR SPECIES. SOME AUTHORITIES REGARD PATHOGENICITY AS THE GENETICALLY DETERMINED ABILITY TO PRODUCE DISEASE, AND VIRULENCE AS DISEASE-PRODUCING ABILITY THAT IS NOT GENETICALLY DETERMINED. SEE ALSO VIRULENCE.

PATHOGNOMONIC. A PATHOGNOMONIC SYMPTOM (OR DIAGNOSTIC SYMPTOM) IS ONE THAT POINTS WITH CERTAINTY TO A PARTICULAR DISEASE OR MALFUNCTION. SUCH A SPECIAL SYMPTOM INDICATES AN ABERRATION OR DISTURBANCE OF A PARTICULAR NATURE BY WHICH A DISEASE MAY BE DEFINITELY RECOGNIZED.

PATHOLOGY. THE SCIENCE THAT DEALS WITH ALL ASPECTS OF DISEASE. THE STUDY OF THE CAUSE, NATURE, PROCESSES, AND EFFECTS OF DISEASE. ANY BRANCH OF SCIENCE, OR ANY TECHNIQUE OR METHOD OR BODY OF FACTS THAT CONTRIBUTES TO OUR KNOWLEDGE OF THE NATURE AND CONSTITUTION OF DISEASE BELONGS IN THE BROAD REALM OF PATHOLOGY. 'INVERTEBRATE PATHOLOGY' REFERS TO ALL ASPECTS OF DISEASE (INCLUDING ABNORMALITIES) WHICH OCCUR IN INVERTEBRATE ANIMALS. SIMILARLY, 'INSECT PATHOLOGY' IS THAT BRANCH OF ENTOMOLOGY OR INVERTEBRATE PATHOLOGY THAT EMBRACES THE GENERAL PRINCIPLES OF PATHOLOGY AS THEY MAY BE APPLIED TO INSECTS. IF BIOLOGY IS DEFINED AS THAT BRANCH OF SCIENCE WHICH DEALS WITH THE ORIGIN, STRUCTURE, FUNCTIONS, AND LIFE HISTORY OF ORGANISMS, THEN PATHOLOGY MIGHT BE DEFINED AS 'BIOLOGY OF THE ABNORMAL.' FOR EACH BRANCH OF BIOLOGY THERE IS A CORRESPONDING BRANCH OF PATHOLOGY. ALSO, IN A MORE LIMITED SENSE, PATHOLOGY REFERS TO THE STRUCTURAL AND FUNCTIONAL CHANGES FROM THE NORMAL. ALSO IN A LIMITED SENSE, GENERAL PATHOLOGY TREATS OF DISTURBANCES WHICH ARE COMMON TO VARIOUS TISSUES AND ORGANS OF THE BODY, SUCH AS DEGENERATIVE PROCESSES, PIGMENTATIONS, MINERAL DEPOSITS, CIRCULATORY DISTURBANCES, SPECIFIC AND NONSPECIFIC INFLAMMATIONS, PROGRESSIVE TISSUE CHANGES SUCH AS HYPERPLASIA AND HYPERTROPHY, AND TUMORS.

PERIOD OF LETHAL INFECTION. IN CASES OF PROGRESSIVE INFECTION, THE TIME INTERVAL BETWEEN INVASION BY A MICROORGANISM AND DEATH OF THE HOST.

PERORAL. BY WAY OF OR THROUGH THE MOUTH. SEE PER OS. AS IN 'PER-ORAL INOCULATION.'

PER OS. BY WAY OF OR THROUGH THE MOUTH. SEE PERORAL. AS IN 'PER-OS ADMINISTRATION OF A DRUG.'

PHAGOCYTES. ('CELLS WHICH DEVOUR.') FIXED OR MOVING CELLS CAPABLE OF ENGULFING AND/OR DESTROYING SOME MICROORGANISMS AND INANIMATE PARTICLES.

PHAGOCYTIC CAPACITY. THE MAXIMUM AMOUNT OF PHAGOCYTOSIS THAT CAN BE CARRIED OUT BY BLOOD CELLS IN A GIVEN SITUATION. IF THE NUMBER OF PARTICLES IN THE HEMOCOEL IS INCREASED BEYOND THAT MAXIMUM, THE PARTICLES ADDED REMAIN FREE IN THE BLOOD PLASMA. THE PHAGOCYTIC CAPACITY MAY BE DESCRIBED BY THE MAXIMUM VOLUME OF PHAGOCYTOSED PARTICLES OR, TO A CERTAIN EXTENT, BY THE MAXIMUM NUMBER OR PERCENTAGE OF CIRCULATING CELLS CONTAINING FOREIGN PARTICLES. (WITTIG 1966)

PHAGOCYTIC RESPONSE. THE TOTALITY OF THE REACTIONS OF THE HEMOCYTES TO SMALL FOREIGN PARTICLES IN THE HEMOCOEL. THE PHAGOCYTIC RESPONSE MAY BE CHARACTERIZED BY (A) THE PICKING UP, ENGULFING AND, PERHAPS, DIGESTION OF THESE PARTICLES BY INDIVIDUAL HEMOCYTES, (B) THE TOTAL NUMBER AND PERCENTAGE OF HEMOCYTES CONTAINING FOREIGN PARTICLES AND THEIR PROPORTION AMONG THE CELLS OF THEIR TYPE AND, UNDER CERTAIN CIRCUMSTANCES, (C) SHIFTS IN THE TOTAL HEMOCYTE COUNT, DIFFERENTIAL HEMOCYTE COUNT, AND THE TOTAL NUMBER OF HEMOCYTES. (WITTIG 1966)

PHAGOCYTOSIS. THE PROCESS OF INGESTION AND DIGESTION BY CELLS, ESPECIALLY THE INGESTION OR ENGULFING OF MICROORGANISMS AND OTHER SMALL PARTICLES BY BLOOD CELLS.

PHYSIOPATHOLOGY. PATHOPHYSIOLOGY. PATHOLOGICAL PHYSIOLOGY. THE STUDY OF ABNORMAL FUNCTION. INVOLVING PATHOLOGICAL ALTERATION OF BODILY FUNCTION.

POLYHEDRON. CRYSTALLIKE INCLUSION BODY (ENCLOSING A NUMBER OF POLYHEDROSIS-VIRUS PARTICLES) PRODUCED IN THE CELLS OF TISSUES AFFECTED BY CERTAIN INSECT VIRUSES. ORDINARILY THE POLYHEDROSIS-VIRUS PARTICLES FORMED IN THE NUCLEI OF THE HOST CELLS ARE ROD-SHAPED WHILE THOSE FORMED IN THE CYTOPLASM ARE POLYHEDRAL OR APPROXIMATELY SPHERICAL. (SEE POLYHEDROSIS.) PLURAL--POLYHEDRA.

POLYHEDROSIS. A VIRUS DISEASE OF CERTAIN INSECTS CHARACTERIZED BY THE FORMATION OF POLYHEDRAL INCLUSIONS IN THE TISSUES OF THE INFECTED INSECT. IF THE INCLUSION BODIES (POLYHEDRA) ARE FORMED IN THE NUCLEI OF THE INFECTED CELLS, THE DISEASE IS KNOWN AS A 'NUCLEAR POLYHEDROSIS' OR 'NUCLEOPOLYHEDROSIS.' IF THE INCLUSIONS ARE FORMED IN THE CYTOPLASM, THE DISEASE IS KNOWN AS A 'CYTOPLASMIC POLYHEDROSIS.' (ONE DOES NOT SPEAK OF A 'POLYHEDRAL DISEASE' SINCE THIS LITERALLY MEANS 'A MANY-SIDED

DISEASE.' ALSO ONE SPEAKS OF A 'POLYHEDROSIS VIRUS' AND NOT OF A 'POLYHEDRAL VIRUS,' MUCH AS ONE SAYS 'ENCEPHALITIS VIRUS.')

PLURAL--POLYHEDROSES.

POPULATION. A GROUP OF INDIVIDUALS OF THE SAME SPECIES SET IN A FRAME THAT IS LIMITED AND DEFINED WITH REGARD TO BOTH TIME AND SPACE.

POPULATION DENSITY. THE NUMBER OF INDIVIDUALS OF ONE POPULATION PER UNIT AREA OR VOLUME.

PORTAL OF ENTRY. POINT AT WHICH THE INVADING MICROBE ENTERS THE BODY OF THE ANIMAL.

POST MORTEM. AFTER DEATH. AS IN POST-MORTEM EXAMINATION, POST-MORTEM CHANGES.

PREDISPOSING FACTORS. FACTORS WHICH, BY THEIR ACTIONS, RENDER AN ORGANISM SPECIALLY SUSCEPTIBLE TO A CERTAIN DISEASE. CONFERRING A TENDENCY TO DISEASE. ALSO--SECONDARY ETIOLOGIC FACTORS.

PRIMARY CULTURE. A CULTURE STARTED FROM CELLS, TISSUES OR ORGANS TAKEN DIRECTLY FROM ORGANISMS. IT DOES NOT INCLUDE CULTURES STARTED FROM EXPLANTS OF TUMORS DEVELOPED BY INJECTING CULTURED CELLS INTO ANIMALS. SUCH CULTURES WOULD BE CONSIDERED MORE PROPERLY AS CONTINUATIONS OF THE INJECTED CELL LINE OR STRAIN. A PRIMARY CULTURE MAY BE REGARDED AS SUCH UNTIL IT IS SUB-CULTURED FOR THE FIRST TIME. IT THEN BECOMES A 'CELL LINE.' SEE ALSO CELL CULTURE, ORGAN CULTURE, TISSUE CULTURE.

PRODROMAL. RELATING TO PRODROMES OR THE INITIAL STAGE OF A DISEASE.

PRODROME. A PREMONITORY SYMPTOM OR SIGN, INDICATING THE ONSET OF A DISEASE.

PROGNOSIS. FORECAST OF THE PROBABLE COURSE OF A DISEASE.

PROGRESSIVE INFECTION. AN INTERACTION BETWEEN AN INFECTIOUS AGENT AND ITS HOST, RESULTING IN OVERT DISEASE OF THE HOST. SEE ALSO INFECTION AND ATTENUATED INFECTION.

PROVIRUS. A NONINFECTIOUS INTRACELLULAR FORM OF A VIRUS. THE GENETIC MATERIAL (GENOME) OF A VIRUS--ESSENTIALLY A NUCLEIC ACID. IT IS PERPETUATED IN STABLE ASSOCIATION WITH THE INTERNAL STRUCTURE OF THE HOST CELL, AND FOR THIS REASON HAS, SO FAR, NOT BEEN DIRECTLY DETECTABLE. ONE OF THREE PHASES (PROVIRAL, VEGETATIVE, AND INFECTIVE) IN WHICH A VIRUS MAY EXIST. (PROPHAGE, WHICH IS THE NUCLEIC ACID OF BACTERIOPHAGE IN LYSOGENIC BACTERIA, IS A PROVIRUS.)

REFAUNATION. REINTRODUCTION OF MUTUALISTIC FAUNA IN A HOST DEPRIVED OF SUCH FAUNA. SEE ALSO MUTUALISM, DEFAUNATE, IN-FAUNATE, TRANSFAUNATION.

REGENERATION. REPRODUCTION OF A LOST PART (THIS MAY BE AT THE MOLECULAR, CELLULAR, TISSUE OR ORGAN LEVEL).

REINFECTION. A SECOND INFECTION BY THE SAME MICROORGANISM OR VIRUS, AFTER RECOVERY FROM OR DURING THE COURSE OF A PRIMARY INFECTION. SEE ALSO SECONDARY INFECTION, SUPERINFECTION.

RESISTANCE. CAPACITY OR POWER TO RESIST. THE ABILITY OF AN ORGANISM TO RESIST UNTOWARD CIRCUMSTANCES SUCH AS TOXIC CHEMICALS, MICROBIAL PATHOGENS, ETC. (IMMUNITY IMPLIES PREVENTING THE DEVELOPING OF A MICROBIAL PATHOGEN OR COUNTERACTING THE ACTIONS OF ITS PRODUCTS.)

RIGOR. RIGIDITY, STIFFNESS. 'RIGOR MORTIS' IS THE RIGIDITY OF MUSCLES AFTER DEATH.

SECONDARY INFECTION. AN INFECTION OCCURRING IN AN ANIMAL ALREADY INFECTED BY A PATHOGENIC MICROORGANISM OR A VIRUS OF DIFFERENT KIND.

SEMIOLOGY. SEE SYMPTOMATOLOGY.

SEPTICEMIA. A MORBID CONDITION CAUSED BY THE MULTIPLICATION OF MICROORGANISMS IN THE BLOOD.

SEQUEL (OR SEQUELA). AN AFTER-EFFECT OF DISEASE OR INJURY. A MORBID CONDITION ARISING AS A CONSEQUENCE OF A PREVIOUS DISEASE.

SIGN. ANY OBJECTIVE ABERRATION OR MANIFESTATION OF DISEASE INDICATED BY A CHANGE IN STRUCTURE.

SPREAD. SEE DISPERSAL.

STRESS. A STATE MANIFESTED BY A SYNDROME OR BODILY CHANGES, CAUSED BY SOME FORCE, CONDITION, OR CIRCUMSTANCE (I.E., BY A STRESSOR) IN OR ON AN ORGANISM OR ON ONE OF ITS PHYSIOLOGICAL OR ANATOMICAL SYSTEMS.

STRESSOR. ANY STIMULUS, OR SUCCESSION OF STIMULI, THAT TENDS TO DISRUPT THE NORMAL HOMEOSTASIS OF AN ANIMAL. STRESSORS ARE FACTORS THAT PRODUCE STRESS.

SUPERINFECTION. A FRESH INFECTION ADDED TO ONE OF THE SAME NATURE ALREADY PRESENT. SEE ALSO REINFECTION, SECONDARY INFECTION.

SUSCEPTIBILITY, SUSCEPTIBLE. THE STATE OF BEING READILY AFFECTED OR ACTED UPON BY AN INJURIOUS AGENT. A SUSCEPTIBLE ORGANISM IS ONE WHICH IS NOT KNOWN TO HAVE BECOME IMMUNE TO A DISEASE BY EITHER NATURAL OR ARTIFICIAL MEANS. SEE ALSO IMMUNITY, RESISTANCE.

SYMBIOSIS. THE LIVING TOGETHER OF INDIVIDUALS OF TWO DIFFERENT SPECIES. ESPECIALLY THE LIVING TOGETHER OF DISSIMILAR ORGANISMS IN A MORE OR LESS INTIMATE ASSOCIATION (AS IN MUTUALISM, COMMENSALISM, AND PARASITISM).

SYMBIOTE. AN ORGANISM LIVING IN SYMBIOSIS. USUALLY THE SMALLER MEMBER OF A SYMBIOTIC PAIR OF DISSIMILAR SIZE (ALSO CALLED MICROSYMBIOTE). FREQUENTLY, THESE MICROORGANISMS ASSOCIATED IN A REGULAR MUTUALISTIC MANNER WITH INSECTS AND OTHER INVERTEBRATES. USUALLY PREFERRED TO 'SYMBIONT.'

SYMPTOM. ANY OBJECTIVE ABERRATION IN FUNCTION (INCLUDING BEHAVIOR), INDICATING DISEASE. (SEE ALSO SIGN.)

SYMPTOMATOLOGY. THE SCIENCE THAT TREATS OF THE SYMPTOMS AND SIGNS OF DISEASE. ALSO, THE STUDY OF THE AGGREGATE OF THE SYMPTOMS AND SIGNS OF A DISEASE. SEMIOLOGY.

SYNAPORIUM. AN ANIMAL ASSOCIATION FORMED OWING TO UNFAVORABLE ENVIRONMENTAL CONDITIONS OR DISEASE.

SYNDROME. A GROUP OF SIGNS AND SYMPTOMS CHARACTERISTIC OF A PARTICULAR DISEASE. A RUNNING TOGETHER OR CONCURRENCE OF SYMPTOMS ASSOCIATED WITH ANY MORBID PROCESS. THERE IS A TREND TOWARD CONSIDERING AS A 'DISEASE ENTITY' ANY MORBID PROCESS THAT HAS A SPECIFIC CAUSE, WHILE A 'SYNDROME' REFLECTS NOT SO MUCH SPECIFIC DISEASE FACTORS AS A CHAIN OF DISRUPTED PHYSIOLOGICAL PROCESSES. THUS, THE SAME SYNDROME MAY ARISE FROM MANY DIFFERENT CAUSES.

SYNXENIC CULTIVATION. THE REARING OF ONE OR MORE INDIVIDUALS OF A SINGLE SPECIES IN ASSOCIATION WITH ONE OR MORE KNOWN SPECIES OF ORGANISMS. ONE SPEAKS OF MCNOXENIC, DIXENIC, TRIXENIC, OR POLYXENIC CONDITIONS ACCORDING TO THE NUMBER OF ASSOCIATED KNOWN SPECIES (ONE, TWO, THREE, OR MORE).

TERATOLOGY. THE SCIENCE CONCERNED WITH MALFORMATIONS AND MONSTROSITIES. SERIOUS DEVIATIONS FROM NORMAL STRUCTURE. THESE ABNORMALITIES MAY BE CLASSIFIED INTO VARIOUS TYPES OR GROUPS. AMONG THE MORE COMMON TYPES OF TERATOLOGICAL CHANGES IN INSECTS, FOR EXAMPLE, ARE PROTHETELY (IMAGINAL ORGANS APPEARING IN LARVAE) HYSTEROTELY (LARVAL STRUCTURES APPEARING IN ADULTS) AND HOMOEOSIS (ONE ANATOMICAL STRUCTURE ASSUMING THE LIKENESS OF ANOTHER).

TERMINAL DISEASE. A DISEASE WHICH ENDS THE LIFE OF AN ORGANISM. IT IS OFTEN SUPERIMPOSED ON SOME OTHER AILMENT.

TISSUE CULTURE. ANIMAL TISSUE CULTURE IS CONCERNED WITH THE STUDY OF CELLS, TISSUES AND ORGANS EXPLANTED FROM ANIMALS AND MAINTAINED OR GROWN IN VITRO FOR MORE THAN 24 HOURS. DEPENDENT UPON WHETHER CELLS, TISSUES OR ORGANS ARE TO BE MAINTAINED OR GROWN, TWO METHODOLOGICAL APPROACHES HAVE BEEN DEVELOPED, CELL CULTURE AND ORGAN CULTURE (WHICH SEE). SEE ALSO EXPLANT, PRIMARY CULTURE.

TOXEMIA. A CONDITION PRODUCED BY THE DISSEMINATION OF TOXINS IN THE BLOOD.

TOXINOSIS. ANY DISEASE CAUSED BY THE ACTION OF A TOXIN.

TRANSFAUNATION. TRANSFER OF SYMBIOTIC FAUNA (USUALLY MUTUALISTIC PROTOZOA) FROM ONE HOST TO ANOTHER. SEE ALSO MUTUALISM, DEFAUNATE, INFAUNATE, REFAUNATION.

TRANSOVARIAN TRANSMISSION. A MODE OF TRANS-OVUM TRANSMISSION IN WHICH THE PASSAGE OF MICROORGANISMS FROM MOTHER TO EGG IS KNOWN TO OCCUR WITHIN THE OVARY.

TRANS-OVUM TRANSMISSION. THE TRANSMISSION OF MICROORGANISMS FROM ONE GENERATION TO THE NEXT BY WAY OF THE EGG. TRANSOVARIAN TRANSMISSION IS A SPECIAL CASE OF TRANS-OVUM TRANSMISSION.

TRANSPORT HOST. ONE PARTNER IN AN INQUILINISTIC RELATIONSHIP-- THE HOST WHICH TRANSPORTS A PATHOGENIC MICROORGANISM TO WHICH IT IS NONSUSCEPTIBLE. ALSO, A MECHANICAL VECTOR. SEE INQUILINISM.

TRANSTADIAL TRANSMISSION. THE TRANSMISSION OF MICROORGANISMS FROM ONE STAGE OF THE HOST TO THE NEXT, THROUGHOUT PART OR ALL OF THE HOST'S LIFE CYCLE.

TRAUMA. WOUNDS OR INJURIES CAUSED DIRECTLY BY VIOLENT CONTACT OF EXTERNAL OBJECTS WITH THE BODY OF THE ANIMAL.

TUMOR. ANY SWELLING (INCLUDING ABNORMAL NEW GROWTH OF CELLS). SEE ALSO NEOPLASM.

VECTOR. AN ARTHROPOD OR OTHER ANIMAL CARRYING A MICROORGANISM PATHOGENIC FOR MEMBERS OF ANOTHER SPECIES. THE VECTOR MAY OR MAY NOT BE ESSENTIAL FOR THE COMPLETION OF THE LIFE CYCLE OF THE PATHOGENIC MICROORGANISM. IF IT IS NOT ESSENTIAL, ONE SPEAKS OF 'MECHANICAL VECTOR' OR TRANSPORT HOST.

VEGETATIVE PHASE. IN VIRUS INFECTION, THE PERIOD DURING WHICH THERE IS AN ACTUAL MULTIPLICATION OF VIRAL MATERIAL. THE PHASE PRECEDING THE FINAL INFECTIVE PHASE. THE SUM OF THE ECLIPSE PERIOD AND THE MATURATION PHASE (WHICH SEE). (IN THE CASE OF BACTERIOPHAGE THE INTERVAL BETWEEN VIRUS ADSORPTION AND LYSIS OF THE BACTERIUM IS SOMETIMES CALLED THE 'LATENT PERIOD.') SOME AUTHORITIES DISLIKE THE USE OF THE TERM IN RELATION TO VIRUSES BECAUSE OF PLANT-CELL CONNOTATIONS.

VIREMIA. THE PRESENCE OF VIRUS IN THE HEMOLYMPH OR BLOOD.

VIRION. THE MATURE VIRUS, THE ULTIMATE PHASE OF VIRAL DEVELOPMENT. THE VIRION IS EITHER A NAKED OR AN ENVELOPED NUCLEO-CAPSID. THE TERM 'VIRUS' EMBRACES ALL PHASES OF THE VIRAL DEVELOPMENT, AND IT INCLUDES THE VIRION.

VIRULENCE. THE QUALITY OR PROPERTY OF BEING VIRULENT. THE QUALITY OF BEING POISONOUS. THE DISEASE-PRODUCING POWER OF A MICROORGANISM, I.E., THE ABILITY OF A MICROORGANISM TO INVADE AND INJURE THE TISSUES OF ITS HOST. THE RELATIVE CAPACITY OF A MICROORGANISM TO OVERCOME THE BODY DEFENSES OF THE HOST. THE DEGREE OF PATHOGENICITY WITHIN A GROUP OR SPECIES. THUS, ONE MAY SPEAK OF AVIRULENT, VIRULENT, AND HIGHLY VIRULENT STRAINS WITHIN A GROUP OR SPECIES OF MICROORGANISMS THAT ARE SAID TO BE PATHOGENIC. ACCORDING TO SOME AUTHORS, DISEASE-PRODUCING ABILITY THAT IS NOT GENETICALLY DETERMINED. SEE ALSO PATHOGENICITY.

XENIC CULTIVATION. THE REARING OF ONE OR MORE INDIVIDUALS OF ONE SPECIES IN ASSOCIATION WITH AN UNKNOWN NUMBER OF SPECIES OF OTHER ORGANISMS.

ZOONOSIS. ANY DISEASE IN MAN ACQUIRED FROM ONE OF THE LOWER ANIMALS, INCLUDING INVERTEBRATES.

REFERENCES AND SOURCE BOOKS

- BIRKELAND, J. M.
1942. MICROBIOLOGY AND MAN. F. S. CROFTS, NEW YORK, 478 PP.
- CASPAR, D. L. D., DULBECCO, R., KLUG, A., WOLFF, A.,
STOKER, M. G. P., TOURNIER, P., AND WILDY, P.
1962. PROPOSALS. COLD SPRING HARBOR SYMP. QUANT. BIOL.
27, 49-50.
- DAWKINS, M. J. R., AND REES, K. R.
1959. A BIOCHEMICAL APPROACH TO PATHOLOGY. EDWARD ARNOLD
LTD., LONDON. 128 PP.
- DORLAND'S ILLUSTRATED MEDICAL DICTIONARY.
1965. 24TH EDITION. W. B. SAUNDERS COMPANY, PHILADELPHIA
AND LONDON. 1724 PP.
- DOUGHERTY, E. C.
1959. INTRODUCTION TO AXENIC CULTURE OF INVERTEBRATE
METAZOA. A GOAL. ANN. N. Y. ACAD. SCI. 77, 27-54.
- ENGEL, G. L.
1960. A UNIFIED CONCEPT OF HEALTH AND DISEASE. PERSPECTIVES
BIOL. MED. 3, 459-485.
- GOSS, R. J.
1966. HYPERTROPHY VERSUS HYPERPLASIA. SCIENCE 153, 1615-1620.
- LUCKEY, T. D.
1963. GERMFREE LIFE AND GNOTOBIOLOGY (APPENDIX II, P. 486-489.
GLOSSARY). ACADEMIC PRESS, NEW YORK AND LONDON.
512 PP.
- SIMON, H. J.
1960. ATTENUATED INFECTION. THE GERM THEORY IN CONTEMPORARY
PERSPECTIVE. J. B. LIPPINCOTT CO., PHILADELPHIA,
MONTREAL. 349 PP.
- SMITH, R. F.
1959. THE SPREAD OF THE SPOTTED ALFALFA APHID, 'THERIOAPHIS
MACULATA' (BUCKTON), IN CALIFORNIA. HILGARDIA 28,
647-685.
- STEDMAN'S MEDICAL DICTIONARY.
1966. 21ST EDITION, COMPLETELY REVISED. THE WILLIAMS AND
WILKINS COMPANY, BALTIMORE, MARYLAND. 1836 PP.
- STEINHAUS, E. A.
1949. PRINCIPLES OF INSECT PATHOLOGY. MCGRAW-HILL BOOK CO.,
INC. NEW YORK. 757 PP.
- STEINHAUS, E. A. (ED.)
1963. INSECT PATHOLOGY, AN ADVANCED TREATISE. VOLUME 1, 661 PP.,
VOLUME 2, 689 PP. ACADEMIC PRESS, NEW YORK.

TISSUE CULTURE ASSOCIATION, COMMITTEE ON TERMINOLOGY
(S. FEDOROFF, CHAIRMAN).

1966. PROPOSED USAGE OF ANIMAL TISSUE CULTURE TERMS.
IN VITRO 2, 155-159.

WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY.

1961. G. AND C. MERRIAM COMPANY. SPRINGFIELD, MASSACHUSETTS.
1680 PP.

WHITE, W. A.

1926. THE MEANING OF DISEASE. WILLIAMS AND WILKINS,
BALTIMORE. 220 PP.

WITTIG, G.

1966. PHAGOCYTOSIS BY BLOOD CELLS IN HEALTHY AND DISEASED
CATERPILLARS. J. INVERTEBRATE PATHOL. 8, 461-477.

